

SECTION I (AMENDMENTS TO THE CLAIMS):

Following is a listing of claims 1-45, as amended herein with markings to show changes as follows:

1-37. (Cancelled).

38. (New) A method for detecting a toxicant in an aquatic, terrestrial, gaseous or industrial environmental sample, said method comprising contacting said sample putatively containing said toxicant with a nucleic acid molecule; and screening for either dissociation of binding between said nucleic acid molecule and a dye, or inhibition of binding of the dye to said nucleic acid molecule, wherein said dissociation or inhibition of binding is indicative of the presence of said toxicant.

39. (New) A method for detecting a toxicant in an aquatic, terrestrial, gaseous or industrial environmental sample, said method comprising contacting said sample putatively containing said toxicant with a nucleic acid molecule after said nucleic acid molecule is bound to a dye; and detecting dissociation of said dye from said nucleic acid molecule as indicative of the presence of said toxicant.

40. (New) A method for detecting a toxicant in an aquatic, terrestrial, gaseous or industrial environmental sample, said method comprising contacting said sample putatively containing said toxicant with a nucleic acid molecule before said nucleic acid molecule is contacted with a dye; and detecting inhibition of binding of the dye to said nucleic acid molecule as indicative of the presence of said toxicant.

41. (New) A method for detecting a toxicant in an aquatic, terrestrial, gaseous or industrial environmental sample, said method comprising (a) contacting said nucleic acid molecule with a dye and with said sample putatively containing said toxicant, and determining the amount of binding between said nucleic acid molecule and said dye in the presence of said sample; and (b) comparing the amount determined in (a) to the amount of binding between said

nucleic acid molecule and said dye in the absence of said sample, wherein a reduction of the amount in (a) relative to (b) is indicative of the presence of said toxicant in said sample.

42. (New) A method according to any one of Claims 38-41, wherein the toxicant is a heavy metal, a heavy metal ion, an organic compound or an organo-halide.

43. (New) A method according to any one of Claims 38-41, wherein said dye is selected from the group consisting of acridine orange and ethidium bromide.

44. (New) A method according to any one of Claims 38-41, wherein said nucleic acid molecule is immobilized to a substrate comprising glass, polystyrene, polymethacrylate, cellulose, nylon, polyvinylchloride or polypropylene.

45. (New) A method according to Claim 44 wherein said substrate is polystyrene or polymethacrylate.